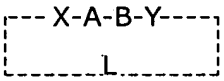
AMENDMENTS TO THE CLAIMS

Please amend claims 8, 15, 19, 20, and 32, and add new claims 163-171, as shown in the following listing of claims, which will replace all prior versions and listings of claims in the application. Claims 1, 2, 4-9, 12, 13, 15, 18-28, 31-113, and 138-171 are pending in the application.

In the claims:

1 (previously presented). A compound having the general formula I

(I) 

where the dashed line indicates that formula I is optionally cyclic, and the bonds shown represent covalent bonds;

and wherein A represents a chemical moiety having an amino group (radical) and a carboxy group that forms part of the peptide bond connecting A to X and B;

B represents a chemical moiety having an amino group (radical) and a carboxy group that forms part of the peptide bond connecting B to A and Y;

X represents a peptide sequence of from 1 to 3 amino acid residues which independently may be an L or D form when Y represents a C-terminal peptide sequence of from 2 to 5 amino acid residues which may independently be L- or D-forms;

or X represents an N-terminal modification of the group A-B when Y represents a C-terminal peptide sequence of from 2 to 5 amino acid residues which may independently be L- or D-forms; or

X represents a peptide sequence of from 2 to 5 amino acid residues which may independently be L- or D-forms when Y represents a C-terminal peptide sequence of from 1 to 3 amino acid residues which independently may be an L or D form;

and when formula I represents a linear peptide X is optionally chemically modified at its N-terminal,
and L is an optional linking group comprising from 0 to 8 backbone atoms;

and a mirror image or a retro analogue of formula I, or a derivative of formula I which is a pharmaceutically acceptable salt, an alkyl, aryl or aralkyl ester, an amide, a mono or disubstituted amide where the substituent is an alkyl, an aryl or an aralkyl, a hydrazide, or an alcohol;
with the proviso that the compounds
(SEQ ID NO: 41) H-Gly-Pro-Leu-Gly-Pro-OH,
(SEQ ID NO: 42) H-Pro-4Hyp-Gly-Ala-Gly-OH,
(SEQ ID NO: 43) N-3-(4-hydroxyphenyl)propionyl-Pro-4Hyp-Gly-Ala-Gly-OH,
(SEQ ID NO: 44) N-3-phenylpropionyl-Pro-4Hyp-Gly-Ala-Gly-OH,
(SEQ ID NO: 45) N-3-phenylpropyl-Pro-4Hyp-Gly-Ala-Gly-OH,
N-3-(4-hydroxyphenyl)propionyl-Pro-4Hyp-Gly-Ala-OH,
N-3-(4-hydroxyphenyl)propionyl-Pro-4Hyp-Gly-OH,
N-3-(4-hydroxyphenyl)propionyl-Pro-4Hyp-OH,
(SEQ ID NO: 46) N-3-(4-hydroxyphenyl)propionyl-Pro-Pro-Gly-Ala-Gly-OH,
(SEQ ID NO: 47) H-Gly-Ala-Gly-4Hyp-Pro-Tyr-NH_2,
(SEQ ID NO: 48) H-Gly-Ala-Gly-4Hyp-Pro-Tyr-OH,
(SEQ ID NO: 49) H-Ala-Gly-4Hyp-Pro-Tyr-NH_2,
(SEQ ID NO: 50) H-Gly-Sar-Pro-Gly-Ala-Gly-OH,
(SEQ ID NO: 51) H-Gly-Pro-Sar-Gly-Ala-GlyOH,
(SEQ ID NO: 52) H-Gly-Sar-Sar-Gly-Ala-Gly-OH,
(SEQ ID NO: 53) H-Gly-Ala-Gly-Hyp-Pro-Tyr(3-I)-NH_2,
(SEQ ID NO: 54) H-Gly-Ala-Gly-Hyp-Pro-Tyr(3-F)-NH_2
(SEQ ID NO: 55) H-Gly-Ala-Gly-Hyp-Pro-Tyr(3-Cl)-NH_2
(SEQ ID NO: 56) H-Gly-Ala-Gly-Hyp-Pro-Tyr(3-Br)-NH_2
(SEQ ID NO: 57) H-Arg-Ala-Gly-Hyp-Pro-Tyr-NH_2
(SEQ ID NO: 58) H-Val-Ala-Gly-Hyp-Pro-Tyr-NH_2
(SEQ ID NO: 59) H-Ala-Ala-Gly-Hyp-Pro-Tyr-NH_2
(SEQ ID NO: 60) H-Gly-Ala-Gly-Hyp-His-Tyr-NH_2
(SEQ ID NO: 61) H-Gly-Ala-Gly-Hyp-Pro-Phe-NH_2
(SEQ ID NO: 62) Cyclo(CF_3C(OH)-Gly-Ala-Gly-4Hyp-Pro-Tyr-CONH), and

(SEQ ID NO: 63) Cyclo(CO-Gly-Ala-Gly-4Hyp-Pro-Tyr-CONH)
are not covered by the general formula I.

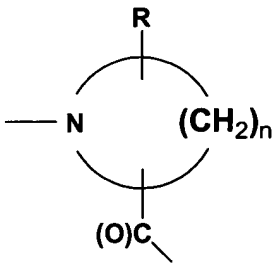
2 (previously presented). The compound according to claim 1 wherein said covalent bonds are selected from peptide bonds, disulphide bonds, ester bonds, reduced amide bonds, alkoxy bonds, oxycarbonyl bonds, and acyloxyalkoxy bonds.

3 (canceled).

4 (previously presented). The compound according to claim 1, wherein A and B each represents an amino acid or an amino acid derivative having functional amino and carboxy groups.

5 (previously presented). The compound according to claim 1 , wherein A-B represents a dipeptide selected from the group consisting of Sar-Sar, Sar-Hyp, Hyp-Sar, Pro-Sar, Sar-Pro, Pro-Hyp, Pro-Pro, Hyp-Pro, and Hyp-Hyp, where Pro and Hyp independently may be an L or D form, where the ring structure of Pro and Hyp is optionally substituted with halogen, nitro, methyl, amino, or phenyl, and Hyp represents 3-hydroxyproline or 4-hydroxyproline, or one or both of the amino acid residues of A-B is a Sar, or N-cyclohexylglycine residue.

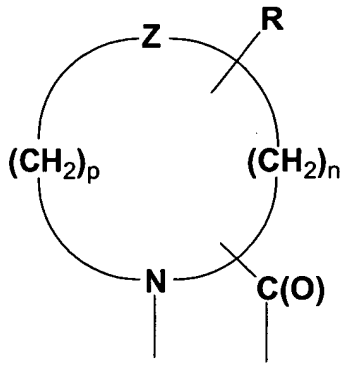
6 (previously presented). The compound according to claim 1, wherein the groups A and B each independently represents a group of the formula II



(II)

wherein n is an integer having the value 3, 4, or 5, and R represents an optional substituent, preferably selected from the group consisting of halogen, phenyl, hydroxy, NH_2, and C(1-6)alkyl optionally substituted with halogen.

7 (previously presented). The compound according to claim 1, wherein the groups A and B are represented by the formula IIa



IIa

Wherein n is an integer having the value 0, 1, 2, and 3, p is an integer having the value 0, 1, 2, and 3, Z represents O or S, and R represents an optional substituent, preferably selected from the group consisting of halogen, phenyl, hydroxy, NH_2, and C(1-6)alkyl.

8 (currently amended). The compound according to claim 1, wherein R is selected from the group consisting of F, Cl, Br, phenyl, OH, NH_2, CH_3, and CF_3.

9 (previously presented). The compound according to claim 1, wherein A and B independently represents an amino acid residue having a saturated carbocyclic structure of 4, 5 or 6 members and where in said carbocyclic structure further comprises one or more heteroatoms.

10. – 11. (canceled)

12 (previously presented). The compound according to claim 1, wherein A and B is selected from the group consisting of N- and C(O)- radicals of the following compounds:
D/L-azetidin-3-carboxylic acid,
D/L-azetidin-2-carboxylic acid,
D/L-Indolin-2-carboxylic acid,

D/L-1,3-dihydro-isoindol-1-carboxylic acid,
D/L-thiazolidin-4-carboxylic acid,
D/L-pipecolinic acid,
D/L-Nipecotinic acid,
Isonipecotinic acid,
L/D-2-carboxymorpholin,
L/D-1,2,3,4-tetrahydroquinolin-3-carboxylic acid,
L/D-1,2,3,4-tetrahydroquinolin-3-carboxylic acid, and
4-carboxy-4-phenyl-piperidin.

13 (previously presented). The compound according to claim 1, wherein formula I represents a linear peptide wherein said chemical modification of the N-terminal of X is an acylation with an optionally substituted straight, branched, saturated, unsaturated, or aromatic C(1-22)carboxylic acid where the substituent is selected from hydroxy, halogen, C(1-6)alkyl, nitro or cyano and may be situated on the carbon chain or the aromatic moiety.

14 (canceled).

15 (currently amended). The compound according to claim 1, wherein formula I represents a linear peptide wherein said chemical modification of the N-terminal of X is an alkylation with an optionally substituted C(1-22)alkyl or aryl C(1-22)alkyl where the substitutent is selected from hydroxy, halogen, C(1-6)alkyl, nitro or cyano and may be situated on the carbon chain or the aromatic moiety.

16. – 17. (canceled)

18 (previously presented). The compound according to claim 1, wherein X represents one amino acid residue.

19 (currently amended). The compound according to ~~the~~ claim 1, wherein said amino acid residue is selected from the group consisting of L-Tyr and D-Tyr optionally acylated with a C(1-4)carboxylic acid when Y represents a C-terminal peptide sequence of from 2 to 5 amino acid

residues as defined in claim 1.

20 (currently amended). The compound according to claim 1, wherein said C(1-4)carboxylic acid is acetic acid.

21 (previously presented). The compound according to claim 1, wherein A-B is selected from the group consisting of Pro-Hyp, Pro-Pro, Hyp-Pro, and Hyp-Hyp where Pro and Hyp independently may be an L or D form.

22 (previously presented). The compound according to claim 1, wherein Hyp represents L-4Hyp.

23 (previously presented). The compound according to claim 1, wherein Y represents a peptide of 3 or 4 amino acid residues being independently L- or D-forms.

24 (previously presented). The compound according to claim 1, having Sar or Gly at its C-terminal.

25 (previously presented). The compound according to claim 1, wherein Y represents a peptide sequence selected from the group consisting of
Gly-L-Ala-Gly,
Gly-L-Ala-Gly,
Gly-D-Ala-Gly,
Gly-D-Ala-Gly, and
Sar-Aib-Sar.

26 (previously presented). The compound according to claim 1, wherein formula I represents a linear peptide and X represents an N-terminal modification of the group A-B.

27 (previously presented). The compound according to claim 1, wherein said modification is an acylation of the N-terminal of A-B with a compound selected from the group consisting of phenylpropionic acid and derivatives thereof; phenylacetic acid and derivatives thereof; phenoxyacetic acid and derivatives thereof; benzoylglycine and derivatives thereof; and

phenylglycine and derivatives thereof.

28 (previously presented). The compound of formula I selected from the group consisting of
(SEQ ID NO: 69) Ac-L-Tyr-L-Pro-L-4Hyp-Gly-L-Ala-Gly,
Ac-D-Tyr-D-Pro-D-4Hyp-Gly-D-Ala-Gly,
A portion of various compounds 4HPPA-L-Pro-L-4Hyp-Gly-L-Ala-Gly, and
a pharmaceutically acceptable salt, an alkyl ester, an amide, an alkylamide, an aryl amide, a dialkylamide, an aryl/alkyl amide, a hydrazide, or an alcohol thereof.

29. – 30. (canceled)

31 (previously presented). The compound according to the preceding claim wherein A-B is selected from the group consisting ofPro-Hyp, Pro-Pro, Hyp-Pro, and Hyp-Hyp where Pro and Hyp independently may be an L or D form and Hyp preferably represents 4-hydroxyproline.

32 (currently amended). The compound according to ~~caim 1~~claim 1, wherein A-B represents unsubstituted L-Pro-L-4Hyp, L-4Hyp-L-Pro, D-Pro-D-4Hyp, or D-4Hyp-D-Pro.

33 (previously presented). The compound according to claim 1, wherein X represents a single amino acid residue.

34 (previously presented). The compound according to claim 1, wherein X represents L-Tyr or D-Tyr optionally further substituted with halogen, phenyl, hydroxy, NH_2, C(1-6)alkoxy, aryloxy, and C(1-6)alkyl optionally substituted with halogen, at its aromatic ring when Y represents a peptide of 3 or 4 amino acid residues being independently L- or D-forms.

35 (previously presented). The compound according to claim 1, wherein Y has Asp, Asn, Gln or Glu at its C-terminal.

37 (previously presented). The compound according to claim 1, wherein Y represents a peptide sequence selected from the group consisting of
Gly-L-Ala-L-Asn,
Gly-D-Ala-L-Asn,

(SEQ ID NO: 166) Gly-L-Ala-Gly-L-Asn,
Gly-L-Ala-Gly-D-Asn,
Gly-L-Ala-L-Gln,
(SEQ ID NO: 167) Gly-L-Ala-Gly-L-Gln,
Gly-L-Ala-Gly-D-Gln,
Gly-D-Ala-D-Asn,
Gly-D-Ala-Gly-D-Asn,
Gly-D-Ala-Gly-L-Asn,
Gly-D-Ala-D-Gln,
Gly-D-Ala-Gly-D-Gln,
Gly-D-Ala-L-Gln,
Gly-D-Ala-Gly-D-Gln,
Gly-L-Ala-L-Asp,
Gly-D-Ala-L-Asp,
(SEQ ID NO: 168) Gly-L-Ala-Gly-L-Asp,
Gly-L-Ala-Gly-D-Asp,
Gly-L-Ala-L-Glu,
(SEQ ID NO: 169) Gly-L-Ala-Gly-L-Glu,
Gly-L-Ala-Gly-D-Glu,
Gly-D-Ala-D-Asp,
Gly-D-Ala-Gly-D-Asp,
Gly-D-Ala-Gly-L-Asp,
Gly-D-Ala-D-Glu,
Gly-D-Ala-Gly-D-Glu,
Gly-D-Ala-L-Glu,
Gly-D-Ala-Gly-D-Glu.

38 (previously presented). The compound according to claim 1, wherein X represents a peptide sequence selected from the group consisting of
Gly-L-Ala-L-Asp,
(SEQ ID NO: 170) Gly-L-Ala-Gly-L-Asp,
Gly-L-Ala-L-Glu,
(SEQ ID NO: 171) Gly-L-Ala-Gly-L-Glu,

Gly-D-Ala-D-Asp,

Gly-D-Ala-Gly-D-Asp,

Gly-D-Ala-D-Glu,

Gly-D-Ala-Gly-D-Glu,

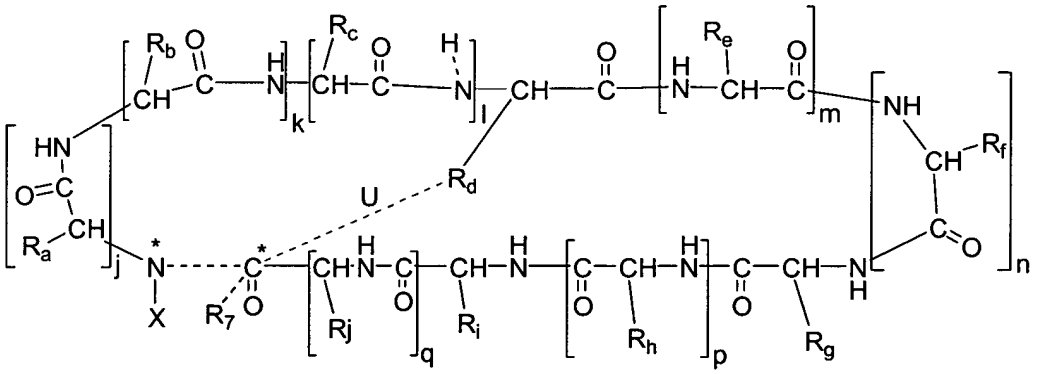
and Y represents a single amino acid residue.

39 (previously presented). The compound according to claim 1, wherein Y represents L-Tyr or D-Tyr optionally further substituted with halogen, phenyl, hydroxy, NH_2, C(1-6)alkoxy, aryloxy, and C(1-6)alkyl optionally substituted with halogen, at its aromatic ring.

40 (canceled).

41 (original). A compound of the general formula XII

(XII)



representing a peptide sequence wherein the amino acid residues may be D- and/or L-forms, and having the N-terminal at N* and the C-terminal at C* and being optionally cyclic via a covalent bond between N* and C* as shown by a broken line or between R_d and C* as shown by the broken line U; and wherein

X represents an N-terminal moiety such as a photoprobe capable of being bond to the amino terminal N*, or an acyl group derived from a C(2-22)alkyl carboxylic acid, such as acetic acid, propionic acid, butyric acid and other fatty acids, such as behenic acid, optionally substituted with one or more substituents selected from the group consisting of hydroxy, halogen, C(1-6)alkyl, nitro and cyano; or X represents hydrogen;

R_7 represents OH, NH_2, $NHNH_2$ or OR_8 when the bond between N* and C* is missing, or R_7 is absent when there is a bond between N* and C*;
R_8 represents H or a straight or branched C(1-6)alkyl group, an aryl or an aralkyl group.
R_a represents the amino acid side chain of Hyp or Pro;
R_b represents the amino acid side chain of Hyp or Pro;
R_c represents the amino acid side chain of Gly, Sar, an aromatic amino acid side chain optionally substituted with one or more hydroxy, halogen or lower alkoxy group in the aromatic ring;
R_d represents the amino acid side chain of Ala, Gly, Glu, Asp, Dab, Dapa, Lys, Asn, Gln, Orn, or Cys;
R_e represents the amino acid side chain of Ala;
R_f represents the amino acid side chain of Ala, Sar or Gly;
R_g represents any amino acid side chain except the side chain of L-4Hyp or a moiety of formula II or Iia;
R_h represents the amino acid side chain of Ala, or R_g represents a moiety of formula II or IIa;
R_i represents the amino acid side chain of Gly or R_i represents an aromatic amino acid optionally substituted with one or more halogen groups in the aromatic ring;
R_j represents Asn, Gln, Asp, Glu, Cys or Tyr;
and each of j, k, l, m, n, p and q is independently 0 or 1;
and the retro form, all D form, or retro all-D form of the peptide sequence of formula XII, and salts and amides thereof.

42 (previously presented). The compound according to claim 41 wherein X is selected from the group consisting of Ac and the photoprobes ASAL optionally iodinated in position 5 to yield the group 2-hydroxy-4-azido-5-iodo benzoyl, and AB.

43 (previously presented). The compound according to claim 41, wherein R_7 is NH_2.

44 (previously presented). The compound according to claim 41, wherein R_a is the amino acid side chain of Pro.

45 (previously presented). The compound according to claim 41, wherein R_b is the amino acid side chain of Hyp.

46 (previously presented). The compound according to claim 41, wherein R_c is the amino acid side chain of Gly or Tyr.

47 (previously presented). The compound according to claim 41, wherein R_d is selected from the group consisting of the amino acid side chain of Gly, Asp or Glu, Dapa and Dab.

48 (previously presented). The compound according to claim 41 wherein R_f is Ala or Gly.

49 (previously presented). The compound according to claim 41, wherein R_g is the amino acid side chain of Pro, Asn or Gly.

50 (previously presented). The compound according to claim 1, wherein R_g is the amino acid side chain of Asn, Gly, D-4Hyp or L-/D-Pro when formula XII represents a linear peptide, or when formula XII represents a peptide cyclised between N* and C* then R_g represents the amino acid side chain of L-/D-4Hyp or L-/D-Pro.

51 (previously presented). The compound according to claim 1 wherein R_h is the amino acid side chain of Ala when U is missing, or R_h is Pro or Hyp when U is present.

52 (previously presented). The compound according to claim 41, wherein R_i is preferably Tyr, Phe, Trp, Nal optionally substituted with one or more hydroxy, F or Cl, in the aromatic ring.

53 (previously presented). The compound according to claim 41, wherein R_j is selected from the group consisting of the amino acid side chain of Asp, Glu, and Tyr.

54 (original). A linear peptide according to claim 41 of formula XII which is an retro all-D form.

55 (previously presented). The compound according to claim 1 consisting of between 3 and 9 amino acid residues, more preferably between 3 and 7 amino acid residues and wherein j and k are preferably 0 when U is present, j and k are preferably 1 when U is missing and formula XII represents a cyclic peptide, m is preferably 0 when U is missing, p is preferably 1 when U is present, and q is preferably 0 when U is present.

56 (previously presented). The compound according to claim 1 or 41 and having the general formula XIII

(XIII) $X\text{-}(G')_a\text{-}A\text{-}G'\text{-}(Px)_2\text{-}(Y')_b\text{-}R_7$

specifying a peptide sequence wherein the amino acid residues may be L and/or D forms, and wherein

X represents H or Ac;

G' represents a glycine residue or a glycine analogue such as Sar;

A represents alanine;

Px represents an amino acid residue of formula II or IIa such as Hyp or Pro;

Y' represents tyrosine or phenylalanine optionally substituted in the phenyl ring with halogen or hydroxy;

a and b are independently 0 or 1,

R_7 represents OH, NH_2, $NHNH_2$, Asn-NH_2, or Gln-NH_2;

and retro forms thereof and salts thereof.

57 (previously presented). The compound according to claim 56, wherein X represents Ac and all amino acid residues are L-forms.

58 (previously presented). The compound according to claim 56, wherein G' is glycine.

59 (previously presented). The compound according to claim 56, wherein Px is Pro.

60 (previously presented). The compound according to claim 56, wherein Y' is Tyr.

61 (previously presented). The compound according to claim 56, wherein R_7 is NH_2.

62 (previously presented). The compound of formula XIII having the formula XIIIa: $X\text{-}(Y')_b\text{-}(Px)_2\text{-}G'\text{-}A\text{-}(G')_a\text{-}R_7$ wherein all amino acid residues are D-forms and wherein all symbols have the same meaning as defined above for formula XIII and wherein the compound is retro.

63 (previously presented). The compound of formula XIII, wherein at least one Px residue is a D-amino acid and the rest are L-amino acids.

64 (previously presented). The compound of formula XIII, wherein the compound is cyclic and X represents H, R_7 represents Asn or Gln having a covalent bond to Y' which represents Tyr, b is 1, and a is 1.

65 (previously presented). A compound having the formula 2: H-GAG-$(Pa)_2$-NH_2 as defined herein or a salt thereof.

66 (previously presented). The compound according to claim 65 selected from the group consisting of
H-Gly-Ala-Gly-D-Hyp-Pro-Tyr-NH_2,
H-Gly-Ala-Gly-D-Pro-Pro-Tyr-NH_2,
H-Gly-Ala-Gly-D-Pro-Ala-Tyr-NH_2,
H-Gly-Ala-Gly-Gly-D-Pro-Tyr-NH_2,
H-Gly-Ala-Gly-D-Hyp-Ala-Tyr-NH_2,
H-Gly-Ala-Gly-D-Hyp-D-Pro-Tyr-NH_2, and pharmaceutically acceptable salts thereof.

67 (previously presented). A compound having the formula 3: H-GAG-$(Px)_2$-Y-NH_2 as defined herein or a salt thereof.

68 (previously presented). The compound according to claim 67 selected from the group consisting of
(SEQ ID NO: 64) H-Gly-Ala-Gly-NCG-Pro-Tyr-NH_2,
(SEQ ID NO: 65) H-Gly-Ala-Gly-T4C-Pro-Tyr-NH_2,
(SEQ ID NO: 66) H-Gly-Ala-Gly-A2C-Pro-Tyr-NH_2,
(SEQ ID NO: 67) H-Gly-Ala-Gly-PC-Pro-Tyr-NH_2, and pharmaceutically acceptable salts thereof.

69 (previously presented). A compound having the formula 8: H-G'-A-G'-(Px)2-Y-NH_2 as defined herein or a salt thereof.

70 (previously presented). The compound according to claim 69 selected from the group consisting of H-Sar-Ala-Sar-Hyp-Pro-Tyr-NH_2,
(SEQ ID NO: 281) H-Gly-Ala-Sar-Hyp-Pro-Tyr-NH_2, and pharmaceutically acceptable salts thereof.

71 (previously presented). A compound having the formula 6: X-G-D-A-G-(D-Px)$_2$-D-Y-NH$_2$ as defined herein and salts thereof.

72 (previously presented). The compound according to the preceding claim selected from the group consisting of
H-Gly-D-Ala-Gly-D-Hyp-D-Pro-D-Tyr-NH$_2$,
H-Gly-D-Ala-Gly-D-Hyp-D-Pro-D-Tyr-D-Asp-OH,
Ac-D-Tyr(3,5-di-I)-D-Pro-D-Hyp-Gly-D-Ala-Gly-NH$_2$,
Ac-D-Tyr(phenyl ring mono-iodo substituted)-D-Pro-D-Hyp-Gly-D-Ala-Gly-NH$_2$,
Ac-D-Tyr-D-Pro-D-Hyp-(12,13C,15N-Gly)-D-Ala-(1,213C,15N-Gly)-NH$_2$, and pharmaceutically acceptable salts thereof.

73 (previously presented). A compound having the formula 9: X-(Y)p-(Px)$_2$-GAG-NH$_2$ as defined herein and salts thereof.

74 (previously presented). The compound according to the preceding claim selected from the group consisting of
(SEQ ID NO: 282) ASAL-Pro-Hyp-Gly-Ala-Gly-NH$_2$,
(SEQ ID NO: 283) ASAL(mono-iodo substituted)-Pro-Hyp-Gly-Ala-Gly-NH$_2$,
(SEQ ID NO: 284) AB-Tyr-Pro-Hyp-Gly-Ala-Gly-NH$_2$,
(SEQ ID NO: 285) AB-Tyr(3,5-di-I)-Pro-Hyp-Gly-Ala-Gly-NH$_2$, and pharmaceutically acceptable salts thereof.

75 (previously presented). A compound having the formula 10: Cyclo(-GAG-(Px)$_2$-Y-N/Q-) as defined herein and salts thereof.

76 (previously presented). The compound according to the preceding claim selected from the group consisting of
(SEQ ID NO: 286) cyclo(-Gly-Ala-Gly-Hyp-Pro-Tyr-Gln-),
(SEQ ID NO: 287) cyclo(-Gly-Ala-Gly-Hyp-Pro-Tyr-Asn-),
(SEQ ID NO: 288) cyclo(-Gly-Ala-Gly-Pro-Pro-Tyr-Asn-), and pharmaceutically acceptable salts thereof.

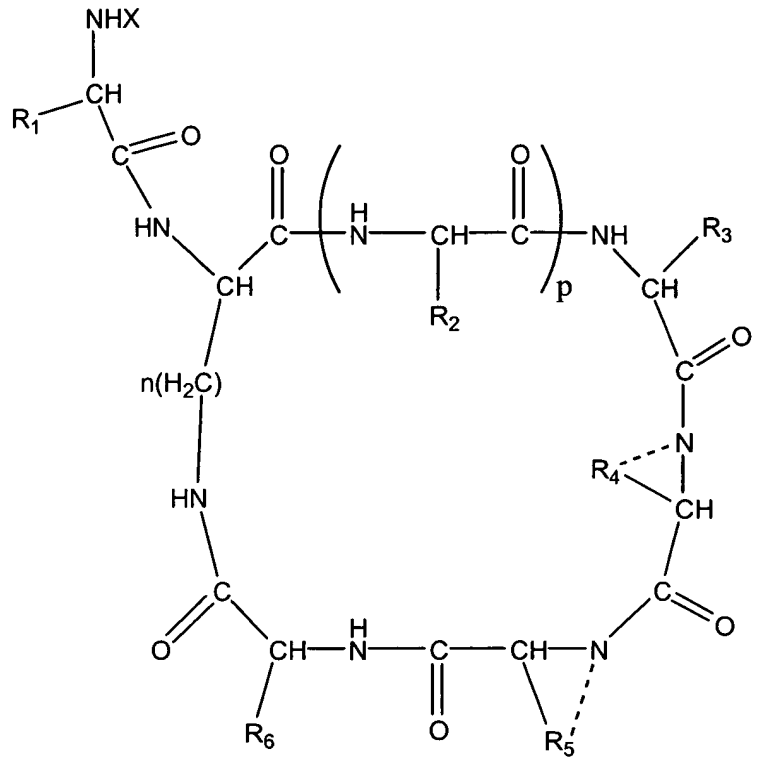
77 (previously presented). A compound having the formula 11: Cyclo(-Y-$(Px)_2$-GA-$(G)_q$-N/Q-) as defined herein and salts thereof.

78 (previously presented). The compound according to claim 77 selected from the group consisting of
(SEQ ID NO: 289) Compound 3 cyclo(-Tyr-Pro-Hyp-Gly-Ala-Gly-Asn-),
(SEQ ID NO: 290) Compound 4 cyclo(-Tyr-Pro-Hyp-Gly-Ala-Asn-),
(SEQ ID NO: 291) cyclo(-Tyr(3-I, 5-I)-Pro-4Hyp-Gly-Ala-Gly-Asn), and pharmaceutically acceptable salts thereof.

79 (previously presented). A compound having the formula 12: X-Zd-G(N/Q)Y-NH_2 as defined herein and salts thereof.

80 (previously presented). Thecompound according to claim 79 selected from the group consisting of
(SEQ ID NO: 292) H-Gly-Ala-Gly-Asn-Tyr-NH_2,
Ac-Gly-Asn-Tyr-NH_2,
H-Gly-Asn-Tyr-NH_2,
(SEQ ID NO: 293) Ac-Ala-Gly-Asn-Tyr-NH_2,
(SEQ ID NO: 294) H-Ala-Gly-Asn-Tyr-NH_2, and pharmaceutically acceptable salts thereof.

81 (previously presented). The compound of formula XII as defined in claim 41, further characterised in having the general formulae XIV:



XIV

wherein

X represents H or an N-terminal moiety such as a photoprobe capable of binding to the N terminal or an acylation with a C(2-22)alkyl carboxylic acid, such as acetic acid, propionic acid, butyric acid and other fatty acids such as behenic acid, being optionally substituted with one or more substituents selected from the group consisting of hydroxy, halogen, C(1-6)alkyl, nitro and cyano;

R_1 represents H or CH_3;

R_2 and R_3 are different or the same and represent any possible amino acid side chain;

------ represents an optional bond;

R_5 and R_4 represent any possible amino acid side chain or when the optional bond is present R_5 and R_4 represent together with the attached C and N atoms a proline ring which is optionally substituted with OH, preferably in the 4-position, or R_5 and R_4 represent together with the attached C and N atoms a moiety of formula II or IIa above;

R_6 represents an aromatic amino acid side chain optionally substituted in the aromatic ring with one or more substituents selected from halogen, nitro and hydroxy;

p is 0 or 1;

n is 1, 2, 3 or 4;

and salts thereof.

82 (previously presented). The compound according to claim 81, wherein X represents H or the photoprobe groups AB or ASAL, which is optionally iodinated.

83 (previously presented). The compound according to claim 81, wherein R_1 represents H.

84 (previously presented). The compound according to claim 81, wherein R_2 and R_3 are different or the same and represent H or CH_3.

85 (previously presented). The compound according to claim 81, wherein R_5 and R_4 represent together with the attached C and N atoms Pro or Hyp.

86 (previously presented). The compound according to claim 81, wherein R_6 represents Tyr.

87 (previously presented). The compound according to claim 81, wherein p is 1.

88 (previously presented). The compound according to claim 81, wherein n is 1.

89 (previously presented). The compound according to claim 81 selected from the group consisting of (SEQ ID NO: 246)

H-Gly-Dapa-Gly-Hyp-Pro-Tyr

(SEQ ID NO: 247)

H-Gly-Dab-Gly-Hyp-Pro-Tyr

(SEQ ID NO: 248)

H-Gly-Dab-Ala-Gly-Hyp-Pro-Tyr

(SEQ ID NO: 249)

H-Gly-Dapa-Ala-Gly-Hyp-Pro-Tyr

H-Gly-D-Dapa-Gly-D-Hyp-D-Pro-D-Tyr

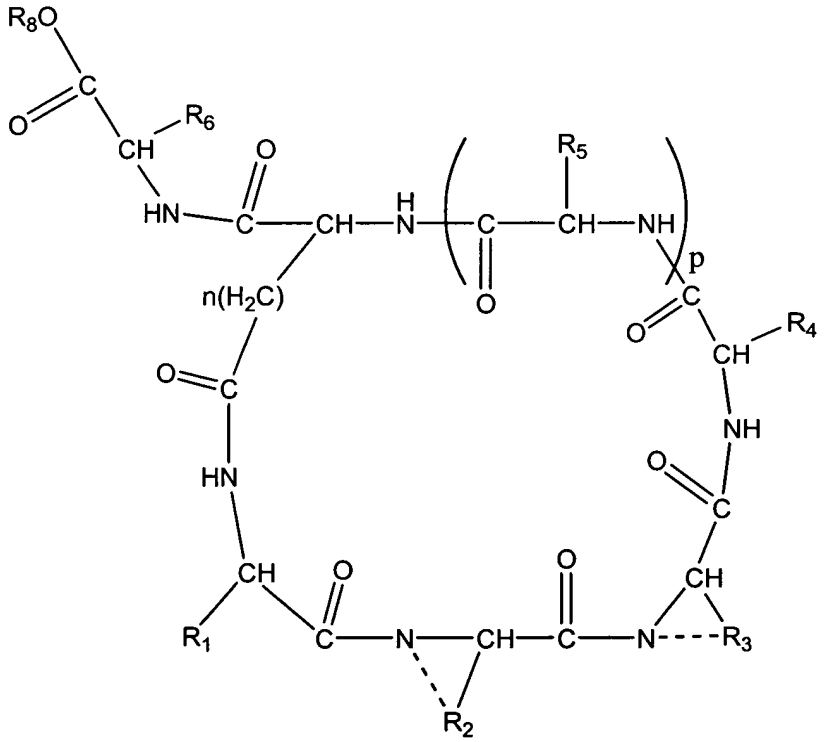
H-Gly-D-Dab-Gly-D-Hyp-D-Pro-D-Tyr

H-Gly-D-Dab-D-Ala-Gly-D-Hyp-D-Pro-D-Tyr

H-Gly-D-Dapa-D-Ala-Gly-D-Hyp-D-Pro-D-Tyr

or pharmaceutically acceptable salts thereof.

90 (previously presented). The compound according to claim 41 further characterised by the



general formula XV

XV

Wherein R_8 represents H or a C(1-6)alkyl group;

R_6 represents H or CH_3;

R_4 and R_5 are different or the same and represent any possible amino acid side chain;

represents an optional bond;

R_2 and R_3 represent any possible amino acid side chain, or when the optional bond is present R_2 and R_3 represent together with the attached C and N atoms a proline ring which is optionally substituted with OH preferably in the 4-position or R_2 and R_3 represent a moiety of formula II or IIa;

R_1 represents an aromatic amino acid side chain;

p is 0 or 1;

n is 1, 2, 3 or 4;

and salts thereof.

91 (previously presented). The compound according to claim 90, wherein R_8 represents H.

92 (previously presented). The compound according to claim 90, wherein R_4 and R_5 are different or the same and represent the amino acid side chain of Gly or Ala.

93 (previously presented). The compound according to claim 90, wherein R_2 and R_3 represent together with the attached C and N atoms Pro or Hyp.

94 (previously presented). The compound according to claim 90, wherein R_1 represents Tyr.

95 (previously presented). The compound according to claim 90, wherein p is 1.

96 (previously presented). The compound according to claim 90, wherein n is 1.

97 (previously presented). The compound according to claim 90 selected from the group consisting of

(SEQ ID NO: 250)

Tyr-Pro-Hyp-Gly-Glu-Gly-NH_2

(SEQ ID NO: 251)

Tyr-Pro-Hyp-Gly-Asp-Gly-NH_2

(SEQ ID NO: 252)

Tyr-Pro-Hyp-Gly-Ala-Asp-Gly-NH_2

(SEQ ID NO: 253)

Tyr-Pro-Hyp-Gly-Ala-Glu-Gly-NH_2

D-Tyr-D-Pro-D-Hyp-Gly-D-Glu-Gly-NH_2

D-Tyr-D-Pro-D-Hyp-Gly-D-Asp-Gly-NH_2

D-Tyr-D-Pro-D-Hyp-Gly-D-Ala-D-Asp-Gly-NH_2

D-Tyr-D-Pro-D-Hyp-Gly-D-Ala-D-Glu-Gly-NH_2

or pharmaceutically acceptable salts thereof.

98 (previously presented). A compound, wherein the amino acid residues may be L- and/or D-forms, and having the general formula XVI

XVI R_1-Aa_1-Al-Aa_2-Ar-R_2

Wherein R_1 represents an optional amide bond between the N and the C terminal of the peptide, H or Ac;

Aa_1 represents a peptide sequence of between 0 and 4 amino acid residues;

Al represents an amino acid residue selected from the group consisting of Gly, beta Alanine and Sar;

Aa_2 represents an amino acid residue selected from the group consisting of Asn, Gln, Gly, Tyr, or a chemical unit, such as a hydroxy acid, an amino sulphonic acid, a phosphate group or a hydrocarbon chain connecting G and Ar via 4 covalent bonds;

Ar represents an aromatic amino acid residue, such as a Tyr, Trp, Phe, His, or Nal, optionally substituted with one or more substituents selected from the group consisting of halogen, such as F, Cl, Br, or I, OH, NO_2, NH_2, COOH, and CONH;

R_2 represents OH, NH_2 or is missing;

and retro analogues, retro all-D analogues (retro-inverse analogues) and salts thereof.

99 (previously presented). The compound according to claim 98, wherein Aa_1 is selected from the group consisting of Ala, Gly-Ala, Gly-Asn-Tyr, and Gly-Asn-Tyr-Ala a portion of various listed compounds.

100 (previously presented). The compound according to claim 98, wherein Al represents Gly or Sar.

101 (previously presented). The compound according to claim 98, wherein Aa_2 represents Asn or Gln.

102 (previously presented). The compound according to claim 98, wherein Ar represents Tyr or Phe optionally substituted with one or more halogen, such as I.

103 (previously presented). The compound according to claim 98, wherein R_2 represents NH_2 when the compound is non-cyclic or R_2 is missing when the compound is cyclic.

104 (previously presented). The compound according to claim 98, selected from the group consisting of
(SEQ ID NO; 254) H-Gly-Ala-Gly-Asn-Tyr-NH_2,
(SEQ ID NO; 255) cyclo(-Tyr-Ala-Ser-Ala-Gly-Asn-),
(SEQ ID NO; 256) cyclo(-Tyr-Ala-Ser-Ala-Gly-Asn-),
(SEQ ID NO; 257) cyclo(-Tyr-Gly-Asn-Tyr-Ala-Gly-Asn-),
(SEQ ID NO; 258) cyclo(-Tyr-Val-Ser-Gly-Ala-Gly-Asn-),
Ac-Gly-Asn-Tyr-NH_2,
H-Gly-Asn-Tyr-NH_2,
(SEQ ID NO; 259) Ac-Ala-Gly-Asn-Tyr-NH_2,
(SEQ ID NO; 260) H-Ala-Gly-Asn-Tyr-NH_2, and pharmaceutically acceptable salts thereof.

105 (original). A photo labile derivative of a compound of formula I, XII, XIII, XIIIa, XIV, XV or XVI herein, characterised in having covalently bound to the N-terminal N atom a photo probe selected from the group consisting of azido, diazo compounds including diazirines and thiadiazoles, optionally substitued nitrophenyl, and optionally substituted benzophenones.

106 (previously presented). The compound according to claim 105 selected from the group consisting ofCompound 31, 32, 33, 34 and salts thereof.

107 (previoùsly presented). A thermo labile derivative of a compound of formula I, XII, XIII, XIIIa, XIV, XV or XVI herein, characterised in having covalently bound to the N-terminal N atom a thermo probe selected from the group consisting of maleimido, optionally substituted pyridyl disulphides, optionally substituted aliphatic halides, isothiocyantes and isocyanates, carbodiimides, activated esters, such as N-hydroxysuccinimide.

108 (previously presented). A compound according to claim 107, which is $BrCH_2CO$-Gly-Asn-Tyr-NH_2 and salts thereof.

109 (previously presented). A compound according to formulae I, XII, XIII, XIIIa, XIV, XV or XVI, having an antiarrhythmic effect in the Langendorf model when used in a concentration of from of 10^{-13} to 10^{-7} M, when diluted in medium.

110 (previously presented). A pharmaceutical composition comprising a compound of formulae I, XII, XIII, XIIIa, XIV, XV and XVI and formulae 2-12, and a pharmaceutically acceptable carrier or diluent.

111 (previously presented). The composition according to claim 110, which is an enteric tablet.

112 (previously presented). The composition according to claim 111, which is an injection preparation.

113 (previously presented). A method of increasing the gap junctional intercellular communication of mammalian cells subjected to glucose and/or oxygen deprivation comprising administering an effective amount of a compound of formulae I, XII, XIII, XIIIa, XIV, XV and XVI and formulae 2-12 to said cells.

114. – 137. (canceled)

138 (previously presented). A method of treatment of arrhythmia comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound of formulae I, XII, XIII, XIIIa, XIV, XV and XVI and formulae 2-12.

139 (previously presented). The method of treatment according to claim 138, wherein said arrhythmia is a reentry arrhythmia of either atrial or ventricular origin, including repolarisation alternans arrhythmia where both supraventricular and ventricular tachyarrhythmias may present as tachycardia, flutter or fibrillation comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound of formulae I, XII, XIII, XIIIa, XIV, XV and XVI, formulae 2-12.

140 (previously presented). A method of antithrombotic treatment comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound of formula I, XII, XIII, XIIIa, XIV, XV or XVI .

141 (previously presented). A method of treatment of osteoporosis comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound of formulae I, XII, XIII, XIIIa, XIV, XV and XVI, formulae 2-12.

142 (previously presented). A method of treating or preventing bone loss and increase the healing of bone fractures comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound of formula I, XII, XIII, XIIIa, XIV, XV or XVI.

143 (previously presented). A method of treatment of joint diseases including arthritis comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound of formulae I, XII, XIII, XIIIa, XIV, XV and XVI, formulae 2-12.

144 (previously presented). A method of treatment of cancer in tissue of endodermal, mesodermal or ectodermal origin, including carcinomas and hepatocellular and cholangiocellular neoplams and bone cancer comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound of formulae I, XII, XIII, XIIIa, XIV, XV and XVI, formulae 2-12.

145 (previously presented). A method of treatment wounds and in particular ischemic ulcers comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound of formulae I, XII, XIII, XIIIa, XIV, XV and XVI, formulae 2-12.

146 (previously presented). A method of treatment gastric and duodenal ulcers comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound of formulae I, XII, XIII, XIIIa, XIV, XV and XVI, formulae 2-12.

147 (currently amended). A method of treating or preventing hypertension by increasing gap junctional coupling and/or GJIC in the vascular wall comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound of formula I, XII, XIII, XIIIa, XIIIa, XIV, XV or XVI.

148 (previously presented). A method of preventing ischemic damage in the brain and treating organic psychoses that may present with symptoms such as depression, anxiety, learning and memory deficit, fobias, or hallucinations comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound of formulae I, XII, XIII, XIIIa, XIV, XV and XVI, formulae 2-12.

149 (previously presented). A method of treating or preventing cataract comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound of formulae I, XII, XIII, XIIIa, XIV, XV and XVI, formulae 2-12.

150 (previously presented). A method of treatment of deafness associated with impaired GJIC comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound of formulae I, XII, XIII, XIIIa, XIV, XV and XVI, formulae 2-12.

151 (previously presented). A method of treatment of gastrointestinal motility disorders comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound of formulae I, XII, XIII, XIIIa, XIV, XV and XVI, formulae 2-12.

152 (previously presented). A method of treatment of female infertility that is due to poor cell-to-cell coupling in the ovaries comprising administering to a patient in need of such treatment a

therapeutically effective amount of a compound of formulae I, XII, XIII, XIIIa, XIV, XV and XVI, formulae 2-12.

153 (previously presented). A method of induction of and facilitation of labour comprising administering along with oxytocin to a patient in need of such treatment a therapeutically effective amount of a compound of formulae I, XII, XIII, XIIIa, XIV, XV and XVI, formulae 2-12.

154 (previously presented). A method of treatment of male infertility associated with impaired cell-to-cell coupling comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound of formulae I, XII, XIII, XIIIa, XIV, XV and XVI, formulae 2-12.

155 (previously presented). A method of improving glucose tolerance in a subject with non-insulin dependent diabetes mellitus due to impaired GJIC between β-cells comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound of formulae I, XII, XIII, XIIIa, XIV, XV and XVI, formulae 2-12.

156 (previously presented). A method of treating or preventing disease in poorly vascularized cartilage and joints comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound of formula I, XII, XIII, XIIIa, XIIIa, XIV, XV or XVI.

157 (previously presented). The method according to claim 156, wherein said disease is arthritis.

158 (previously presented). A method of treating or preventing cataract comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound of formula I, XII, XIII, XIIIa, XIIIa, XIV, XV or XVI.

159 (previously presented). A method of treating or preventing vascularization of the cornea in disease states with poor nutrition of the cornea and increase the healing of corneal lesions comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound of formula I, XII, XIII, XIIIa, XIIIa, XIV, XV or XVI.

160 (previously presented). A method of treating or preventing growth and spreading of cancer cells comprising administering to a patient in need of such treatment a therapeutically effective amount of a compound of formula I, XII, XIII, XIIIa, XIIIa, XIV, XV or XVI.

161 (previously presented). A method of treatment of glucose and oxygen deprivation of cells, a tissue, or an organ in a patient suffering therefrom comprising administering to said patient an effective amount of a compound of formula I, XII, XIII, XIIIa, XIIIa, XIV, XV or XVI.

162 (previously presented). The method according to the preceding claim, wherein said organ is the heart.

163 (new). A compound according to claim 1, wherein said covalent bond is a peptide bond.

164 (new). A compound according to claim 9, wherein said heteroatoms are selected from the group consisting of N, O and S.

165 (new). A compound according to claim 10 selected from the group consisting of L and D forms and derivatives of Prolin having one or more substituents in the 3, 4 or 5 position, said substituents being selected from hydroxy, amino and phenyl.

166 (new). A compound according to claim 13, wherein said C(1-22)carboxylic acid is a C(1-7)carboxylic acid selected from the group consisting of acetic acid; propionic acid, butyric acid and isomers thereof; and benzoic acid.

167 (new). A compound according to claim 15, wherein said C(1-22)alkyl is a C(1-6)alkyl and said aryl C(1-22)alkyl is an aryl C(1-3)alkyl, respectively.

168 (new). A compound according to claim 167, wherein said C(1-6)alkyl or a C(7-9)aralkyl is selected from the group consisting of methyl, ethyl, propyl, butyl, phenylpropyl, 2-hydroxyphenylpropyl, and 4-hydroxyphenylpropyl.

169 (new). A compound according to claim 1, wherein formula I represents a cyclic compound.

170 (new). A compound according to claim 169, wherein said cyclic compound is a cyclic peptide sequence comprising all L-forms, all D-forms, or a sequence of mixed L- and D-forms of the amino acid residues thereof.

171 (new). A compound of formula I where the groups X and Y are connected via a peptide bond or a disulphide bond to form a cyclic compound.